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LEAD IN THE URBAN ENVIRONMENT: A Selected Bibliography

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LEAD IN THE URBAN ENVIRONMENT: A SELECTED BIBLIOGRAPHY

by

Anthony G. White

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Human organisms, when reduced to elementals, are for the most part hydrocarbon compounds, nitrogen compounds, and a small number of nonorganic elements such as iron and calcium. Present also are certain trace elements in very small amounts: chromium, cadium, nickel, flourine, niobium, arsenic, antimony, vanadium, zirconium and lead.

In naturally-regulated amounts, these trace elements perform specific bodily functions, primarily concerned with maintaining hormone balances. It is when these trace elements become present in excess(or deficiency occurs) that imbalance is generated.

Lead is a normally inert element, although it oxidizes and readily reacts with nitric and acetic acids, and is atomically stable with few isotopes. For these reasons, lead makes good shielding for handling and storing radioactive materials.

Lead occurs naturally in the environment as less than one percent of the material in the earth's crust. It is refined as a pure metal, used as such for plumbing pipes, and is added to gasoline to increase octane rating, to paint for color characteristics and to pesticides to increase potency. Lead is also found in many soils favored in the making of pottery, and is used in the processing of many metallic and chemical products and in lead-acid batteries.

Usage of this metal by man tends to overload the environment, particularly the urban environment. Massive automobile traffic pours tons of vaporized lead into the air each day, while most of the structures in an urban area are coated with lead-based paints used prior to the ban on such pigment materials. Imported pieces of pottery containing high proportions of lead are usually distributed through urban centers, and find their way into many urban households.

Some sub-communities are more overloaded with lead than others, most notable the areas called 'ghettos' because of proximity to freeways and arterials and low-income, low-education characteristics. Since lead can enter the human body in several ways - breathing polluted air, drinking water, eating lead-exposed foods or from high-lead dishes, ingesting paint - ghetto children are highly exposed targets for lead poisoning in both of its acute and chronic forms.

Excessive lead can cause anemia, retard hemoglobin formation, lower certain hormone secretions (in particular, by the prostate gland), replace bone calcium, increase suaceptibility to certain diseases, and can indirectly cause excitement, depression and irritability. Symptoms can grow more severe, resulting in mental retardation, insanity, and death.

Action by federal agencies has led to the introduction on the part of gasoline companies of low-lead gasoline, and of withdrawl from the market of lead-based paints, chips of which children tend to eat or ingest by chewing on the wood of cribs.

The purpose of this selected bibliography is to give local government agencies a starting point from which to develop lead-level guidelines. While the literature on the effects of lead poisoning is well developed, its occurrance in the environment and introduction into the body are still under investigation. Since lead is in all its compounds poisonous and its effects are cumulative and residual in nature, the greatest care must be taken to control its use and concentrations in regions of high-density population.

"A Stringent Goal on Lead in Urban Air," Science News. Vol. 101, No. 9, February 26, 1972, p. 133.

Advisory Committee on Tetraethyl Lead. Public Health Aspects of Increading Tetraethyl Lead Content in Motor Fuel. Washington, D. C.: U. S. Public Health Service Bulletin No. 712, 1959.

American Association for the Advancement of Science Air Conservation Commission. Air Conservation. Washington, D. C.: AAAS, 1965.

American Public Health Association, Occupational Health Section. Methods for Determining Lead in Air and in Biological Materials. Washington, D. C.: APHA, 1955.

Assat, G. and P. E. Biscaye. "Lead-212 in the Urban Boundary Layer of New York City," Science. Vol. 175, February 25, 1972, pp. 890-894.

Bazell, Robert J. "Lead Poisoning: Zoo Animals May be the First Victims," Science. Vol. 173, No. 3992, July 9, 1971, pp. 130-131.

________. "Lead Poisoning: Combating the Threat from the Air," Science. Vol. 174, November 5, 1971, p. 574.

Belknap, E. L. and E. L. Belknap, Jr. "Clinical Control of Health in the Storage Battery Industry," Industrial Medicine and Surgery. Vol. 28, 1959, p. 94.

Cadenhead, A. F. G. and A. G. Jacques. "A Possible Source of Lead Poisoning," Canadian Chemistry and Metallurgy. Vol. 5, 1921, p. 260

Capellini, A., L. Pareggiani, E. Sartorelli, and G. C. Martelli, "Study of 34 Cases of Lead Arsenate Poisoning in Two Factories for the Production of Insecticides," Medico Lavorotory. Vol. 46, 1955, p. 147+.

Kehoe, R. A. "Experimental Studies on the Inhalation of Lead by Human Subjects," *Pure and Applied Chemistry*. Vol. 3, 1961, pp. 129+.

__________. "The Harben Lectures, 1960 - The Metabolism of Lead in Man in Health and Disease," *Journal of the Royal Institute of Public Health and Hygiene*. Vol. 24, 1961, pp. 81-97, 101-120, 129-143, 177-203.

__________. J. Cholak, and R. V. Story. "A Spectrochemical Study of the Normal Ranges of Concentration of Certain Trace Metals in Biological Materials," *Journal of Nutrition*. Vol. 19, 1940, pp. 579+.

__________. J. Cholak, and E. J. Largent. "The Concentrations of Certain Trace Metals in Drinking Water: The Hygienic Significance of the Contamination of Water with Certain Mineral Constituents," *Journal of the American Water Works Association*. Vol. 36, 1944, pp. 637+.

__________, et al. "Experimental Studies on the Ingestion of Lead Compounds," *Journal of Industrial Hygiene and Toxicology*. Vol. 22, 1940, pp. 381+.

Koeppe, David E. and Raymond J. Miller. "Lead Effects on Corn Mitochondrial Respiration," *Science*. Vol. 167, March 11, 1970, pp. 1376-1378.

Larsen, R. I. and V. J. Konopinski. "Summer Tunnel Air Quality," *Archives of Environmental Health*. Vol. 5, 1962, pp. 597+.

"Lead and Arsenic in Tobacco," *Journal of the American Medical Association*. Vol. 113, 1939, pp. 2443+.

"Lead Levels Rise," *Science News*. Vol. 97, No. 12, March 21, 1970, p. 184.

"Lead Paints - Protective Hazard," *Michigan's Occupational Health*. Vol. 7, 1961, p. 1.

"Lead Poison Exposure in a Glass Manufacturing Plant," *Industrial Medicine and Surgery*. Vol. 26, 1957, pp. 45+.

Lee, R. E., Jr. et al. "Particle Size Distribution of Metal Components in Urban Air," *Environmental Science and Technology*. Vol. 2, 1968, pp. 288-290.

Marmet, J. *Toxicological Studies of Lead Workers*. Zurick: Eidgenossische Technische Hochschule, 1958, Ph.D. Dissertation.

McIntire, M. S. and C. R. Angle. "Air Lead: Relation to Lead in Blood of Black School Children Deficient in Glucose-6-Phosphate Dehydrogenase," *Science*. Vol. 177, No. 4048, August 11, 1972, pp. 520-522.

Miranda, J. M. *Blood and Urinary Lead Concentrations Among Employees of an Auto Vehicular Tunnel*. Mimeo, 1962.

Pahnke, Alden J. and Edward C. Squire. "Lead in Gasoline: No Effect on Exhaust Emissions Found in 18-Month Consumer-Car Test," *Oil-Gas Journal*. Vol. 64, December 12, 1966, pp. 106-110.

Park, W. E. "Riveters on Railroad Bridge Exposed to Lead Fumes," *Occupational Health*. Vol. 12, n.d., p. 66.

Prince, A. L. "Trace Element Delivering Capacity of 10 New Jersey Soil Types as Measured by Spectrographic Analysis of Soils and Mature Corn Leaves," *Soil Science*. Vol. 84, 1957, pp. 413+.

Robinson, E., L. Ludwig, J. E. DeVries, and T. E. Hopkins. *Variations of Atmospheric Lead Concentrations and Type with Particle Size*. Menlo Park: Stanford Research Institute, 1963.

"Sampling Baby Teeth for Lead," *Science News*. Vol. 101, No. 6, February 5, 1972, p. 91.

Schroeder, Henry A. "Metals in the Air," *Environment*. Vol. 13, No. 8, October 1971, pp. 18-32.

__________, et al. "Chromium, Lead, Cadmium, Nickel and Titanium in Mice: Effect on Mortality, Tumors and Tissue Levels," *Journal of Nutrition*. Vol. 83, 1964, pp. 239-250.

__________, et al. "Chromium, Cadmium and Lead in Rats: Effects on Life Span, Tumors, and Tissue Levels," *Journal of Nutrition.* Vol. 86, 1965, pp. 51-66.

__________, I. H Tipton. "The Human Body Burden of Lead," *Archives of Environmental Health*. Vol. 17, 1968, pp. 965-978.

__________, et al. "Zirconium, Niobium, Antimony and Flouring in Mice: Effects on Growth, Survival and Tissue Levels," *Journal of Nutrition*. Vol. 95, 1968, pp. 95-101.

__________, et al. "Zirconium, Niobium, Antimony, Vanadium and Lead in Rats: Life Term Studies," *Journal of Nutrition*. Vol. 100, 1970, pp. 59-68.

Tabor, E. C. and W. V. Warren. "Distribution of Certain Metals in the Atmosphere of Some American Cities," *Archives of Industrial Health*. Vol. 17, 1958, pp. 145-151.

Tepper, L. B. "Seven-City Study of Air and Population Lead Levels," *Department of Environmental Health Bulletin*. Cincinnati, May 1971.

"Test for Lead Poisoning," *Science News*. Vol. 98, No. 25, December 19, 1970, p. 469.

"The Leaden Atmosphere," *Chemistry*. Vol. 44, No. 7, July 1971, pp. 26-27.

Tipton, I. H. and J. J. Shafer. "Statistical Analysis of Lung Trace Element Levels," *Archives of Environmental Health*. Vol. 8, 1964, pp. 58-67.

Tomson, N. M. "Limits of Allowable Concentrations of Lead in the Air of Residential Regions," in Ryazanov, V. A., editor. *Limits of Allowable Concentrations of Atmospheric Pollutants*. OTS 59-21173, 1952, pp. 65+.

Underwood, E. J. *Trace Elements in Human and Animal Nutrition*. New York: Academic Press Inc., 1962.

Waldron, H. A. "The Anaemia of Lead Poisoning: A Review," British Journal of Industrial Medicine. Vol. 23, No. 2, April 1966, pp. 83-100.

Weber, H. J. "Ventilation at Non-Ferrous Melting and Pouring Operations," American Foundryman. Vol. 21, 1952, pp. 125+.

Weiss, D., B. Whitten, and D. Leddy. "Lead Content of Human Hair, 1871-1971," Science. Vol. 178, October 6, 1972, pp. 69-70.

Wilson, W. L. "Exposures in the Lead Paint Industry," Occupational Hazards. Vol. 11, 1949, pp. 14-36.

Working Group on Lead Contamination. Survey of Lead in the Atmosphere of Three Urban Communitites. Raleigh, North Carolina: U. S. Department of Health, Education and Welfare, 1970.

Zeidler, F. A. J. and W. J. Wagner. "Lead and Arsenic Content of Canadian Domestic Tobacco," Canadian Public Health Journal. Vol. 28, 1937, pp. 582+.

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